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ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.*

(54) Title: BLOCK POLYMER COMPOUND, POLYMER COMPOSITION CONTAINING THE SAME, IMAGE FORMING METHOD AND IMAGE FORMING APPARATUS UTILIZING THE SAME

(57) Abstract: The invention provides a block polymer compound enabling satisfactory dispersion of a colorant in a solvent, and an ink composition containing such block polymer compound. The block polymer compound of the invention is a block polymer compound having at least three block segments, comprising block segments A, B and C arranged in succession, wherein the block segment C is most solvent attractive while the block segment A is most solvent repulsive, and at least either one of the block segments includes an ionic group or an acidic group.

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/JP 03/08353

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 C08F297/02 C09D11/00 C08F16/12

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C08F C09D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	EP 1 285 948 A (CANON KK) 26 February 2003 (2003-02-26)  paragraphs [0036],[0047],[0064]; claims ---	3-10, 12-14, 16-19
X,P	EP 1 243 624 A (CANON KK) 25 September 2002 (2002-09-25)  paragraphs [0036],[0037],[0050],[0061],[0109] claims ---	3-10, 12-14, 16-19
A	US 6 306 994 B1 (DONALD DENNIS SCOTT ET AL) 23 October 2001 (2001-10-23)  claims ---  -/--	3-10, 12-14, 16-19

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

4 December 2003

Date of mailing of the international search report

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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP 03/08353

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>EP 0 465 124 A (XEROX CORP)  8 January 1992 (1992-01-08)</p> <p>claims</p> <p>-----</p>	<p>3-10,  12-14,  16-19</p>

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/JP 03/08353

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☒ Claims Nos.: 1, 2, 11, 14-16, 19  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-13

A block polymer compound having at least three block segments according to claims 1 to 10 and a polymer-containing composition according to claims 11 to 13;

2. Claims: 14-15

A method of increasing the viscosity of a polymer-containing composition according to claims 14 and 15;

3. Claims: 16-18

An image forming method according to claims 16 to 18; and

4. Claim : 19

An image forming apparatus according to claim 19.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 1, 2, 11, 14-16, 19

Claims searched incompletely: 1, 11, 14, 16 and 19

Claim not searched: 2 and 15

Claims 1, 11, 14, 16 and 19 relate to a block copolymer defined by reference to a desirable characteristic, namely that block segments are "solvent attractive" and "solvent repulsive". The definition of the block copolymer claimed by means of said wording renders the scope of the claims unclear, even after taking the description into account. Therefore, no meaningful search to the whole extent of the claims can be carried out.

Similar considerations apply with respect to the wording "stimulus-responsive block segment" in claims 2 and 15.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP 03/08353

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